Montana's Species of Greatest Conservation Need

Conservation efforts at the landscape (focus area) and community level offer some of the greatest potential to leverage resources in order to provide benefit to multiple species. However, some species are too specialized for broad-scale efforts to have an impact, or the population of a species has declined to the point where it requires individual management and research. The following species have been identified as Tier I (in greatest need of conservation). Fish, Wildlife & Parks has a clear obligation to use its resources in order to conserve them, regardless of the scale of conservation or research that is needed.

Invertebrates

Aquatic & Terrestrial Invertebrates in Montana

There are nearly 1,000 species of aquatic invertebrates in the state, and at least 10 times that number of terrestrial invertebrates. At this time, lack of information prevents us from understanding entirely what species even exist in Montana. The same deficiency of information prevents us from being able to determine which of these species are doing well and which are not.

As a result, the FWP steering committee decided that the complete strategy for conservation of Montana's species would only include two invertebrate groups, freshwater mussels and crayfish. All other invertebrates have been identified as in greatest need of inventory so that enough information can be collected to include all invertebrate groups in future revisions of the strategy.

Western Pearlshell (*Margaritifera falcata*)

The western pearlshell occurs near the Continental Divide on both sides. They are found in trout streams and rivers west of the divide, as well as in sand, gravel, and between cobble and boulders of the Missouri headwaters. The western pearlshell often are found in drainages with the west-slope cutthroat trout (its native fish host). Conservation concerns include: habitat degradation and fragmentation (*e.g.*, dams); point and nonpoint source pollution; and stream deterioration due to high sediment loads from agricultural runoff. Conservation strategies include: considering a management plan for the western pearlshell or including it in another comprehensive taxonomic plan; enforcement of regulations addressing dumping of pollutants into waterways; and restoration of stream channels and riparian areas.

Vertebrates: Fish

White Sturgeon (Kootenai River Population) (*Acipenser transmontanus pop. 1*)

The white sturgeon are landlocked in Montana and live isolated in the Kootenai River. Conservation concerns include reduced spring flows, unnatural flow fluctuations and altered thermal regime caused by Libby Dam operation; a suite of post-fertilization early life mortality factors and possible intermittent female stock limitation; and poor habitat conditions in the spawning areas. Conservation strategies include: coordinating more natural flow fluctuations in Libby Dam to enhance natural production; managing non-native species which may prey on young white sturgeon; conserving surrounding terrestrial habitat; and decreasing fine sediments found in lake areas.

Pallid Sturgeon (*Scaphirhynchus albus*)

Pallid sturgeons are found in the Missouri River below Fort Benton and the Yellowstone River below Forsyth. Pallid sturgeons reside in large, strong-current, turbid rivers and their impoundments with sand and gravel bottoms. Conservation concerns include: habitat modifications preventing movement to spawning and feeding areas, and altered natural conditions; upstream and nearby land use practices that degrade water quality; and heavy metals and organic compounds affecting reproduction. Conservation strategies include: restoring natural river conditions and protecting minimum instream flow reservations; supporting cooperative activities that encourage sustainable land management practices in riparian areas; and working with cooperators and public to identify and reduce point source pollutants.

Paddlefish (*Polyodon spathula*)

In Montana, paddlefish are found in the Yellowstone River as far upriver as Forsyth, as well as the Missouri River above and below Fort Peck Dam. Habitat includes slow or quiet waters of large rivers or impoundments. Paddlefish spawn on the gravel bars of large rivers during spring high water. Conservation concerns include: loss of spawning habitat (i.e. they need natural, free-flowing rivers to reproduce effectively); excessive and increasing water depletions for irrigation; and potential introduction of exotic competitors. Conservation strategies include: maintaining instream flows and spawning habitat in large rivers; increasing reservoir water retention during times of drought; and improving public awareness of paddlefish conservation concerns and impacts of non-native species.

Shortnose Gar (*Lepisosteus platostomus*)

The distribution of shortnose gar within Montana is limited, with documentation primarily in the Missouri River dredge cuts downstream of Fort Peck Dam. Shortnose gars are typically found in large rivers, quiet pools, backwaters, and oxbow lakes. Conservation concerns include: limited information in Montana; backwater habitat filled in for agriculture and modified by lack of channel maintenance flows; and cold-water release, lack of turbidity and artificial hydrograph below Fort Peck Dam on the

lower Missouri. Conservation strategies include: considering a management plan for the shortnose gar or including it in another comprehensive taxonomic plan; increasing conservation initiatives for backwater sloughs and channels; and regulating water regimes to be more closely tied to natural water regimes.

Yellowstone Cutthroat Trout (*Oncorhynchus clarki bouvieri*)

Most remaining indigenous populations in Montana inhabit Yellowstone headwater streams, though the Yellowstone River mainstem also supports Yellowstone cutthroat trout. In addition, over 100 lakes now support genetically pure Yellowstone cutthroat trout. Yellowstone cutthroat trout inhabit relatively clear, cold streams, rivers, and lakes. Conservation concerns include: persistence of non-native fish; widespread stocking of non-indigenous populations of yellowstone cutthroat trout; susceptibility to

whirling disease; and tributary dewatering by unsustainable irrigation practices. Conservation strategies include: continuing harvest management of non-native trout; decreasing genetic homogenization of yellowstone cutthroat trout; increasing funding for studying water disease; and decreasing channels and irrigation development.

Westslope Cutthroat Trout (*Oncorhynchus clarki lewisi*)

Westslope cutthroat trout are found in the Kootenai watershed, the Clark Fork watershed, and the headwaters of the Missouri and Saskatchewan Rivers. Spawning streams tend to be cold and nutrient poor, with gravel substrate in riffles and pool crests. Conservation concerns include: habitat loss due to poor natural resource use practices, residential development and impacts of forest roads; and increased hybridization with other species. Conservation strategies include: conserving habitat, including better

natural resource use practices; continuing to conserve genetically pure populations; and increasing stock populations of genetically pure westslope cutthroat trout.

The Kootenai River drainage population of redband trout is Montana's only native rainbow trout. Juveniles and adults use pools more than riffles. Redband trout generally select spawning areas in shallow pool tail-out areas with moderate water velocities dominated by gravel substrate. Conservation

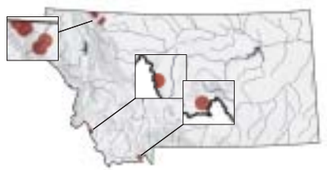
Columbia Basin Redband Trout (*Oncorhynchus mykiss gairdneri*)

concerns include: habitat connectivity loss due to construction of culverts, dams, irrigation diversions and other instream barriers that impede movement; range and forest management practices, including use of pesticides; and hybridization. Conservation strategies include: removing or modifying barriers in a manner that restores beneficial fish passage; managing riparian zones and waters where redband trout reside; and raising genetically pure hatchery Columbian Basin redband trout.

Montana populations are found mainly in the Kootenai and Clark Fork (including Bitterroot, Flathead/Swan and Blackfoot systems). Bull trout reside in larger streams and rivers or lakes and spawn in smaller tributary streams. Conservation concerns include: habitat degradation and loss due to land and water management

Bull Trout (*Salvelinus confluentus*)

practices; isolation and fragmentation of populations by both structural (e.g. dams) and environmental (e.g. thermal or pollution) barriers; and introduction of non-native fishes resulting in competition, predation and hybridization threats. Conservation strategies include: restoring degraded habitat and preserving existing healthy habitat; reestablishing connectivity between habitats isolated by constructed barriers; increasing management of non-native fishes; and preventing illegal introductions.



Montana's native lake trout populations remain in Waterton Lake, Glenns Lake, Cosley Lake, and St. Mary Lake in Glacier National Park and Lower St. Mary Lake in the Blackfeet Indian Reservation. Other native populations occur in Twin Lake in the Big Hole River drainage and Elk Lake in the Red Rock River

Lake Trout (native lakes) (*Salvelinus namaycush*)

drainage. In Montana, native lake trout inhabit a few deep, cold lakes remaining from glacial events. Conservation concerns include: little information on native populations; irregular recruitment; and genetic bottlenecks caused by small size of remaining populations. Conservation strategies include: considering a management plan for the lake trout (native lakes) or including it in another comprehensive taxonomic plan; increasing monitoring and surveying; and reintroducing genetically pure native populations.

Fish

Arctic Grayling (*Thymallus arcticus*)

Fluvial arctic grayling are restricted to the Big Hole River of southwest Montana. Arctic grayling are also found in a few natural lakes and reservoirs in western Montana. Cold water and gravelly substrate are needed for breeding purposes. Conservation concerns include: low flows during drought, decreasing survival due to high water temperatures, susceptibility to predation, and diminished habitat volume; displacement by non-native trout; degradation of riparian vegetation and stream banks by range or forest management practices; and dewatering the river for agricultural uses. Conservation strategies include: creating riparian rehabilitation projects for identified degraded habitats on the Big Hole River; reducing stocking of non-native fish; and supporting management of grazing to maintain riparian vegetation and channel stability.

Sturgeon Chub (*Hybopsis gelida*)

Sturgeon chub are found in the Lower Yellowstone and tributaries including the Tongue and Powder Rivers, as well as the mid and lower Missouri River. Sturgeon chub prefer sites having moderate currents and depths, and sand or rock substrates. Conservation concerns include: habitat alteration by dam operations, reduced turbidities and/or altered temperature and flow regimes; channelization of the Missouri River due to irrigation operations; removal of wild individuals used for bait fish; and constriction of range due to low stream flows. Conservation strategies include: developing conservation practices on large rivers in eastern Montana; educating public on the necessity of native species; and repopulating tributaries such as Teton and Milk Rivers to establish periphery populations.

Sicklefin Chub (*Hybopsis meeki*)

In Montana, sicklefin chub are found in the middle and lower Missouri River and lower Yellowstone River. They seem to prefer deeper water and sandy substrate. Spawning occurs in main channel areas of large turbid rivers, which they inhabit. Conservation concerns include: habitat alteration by dam operations, reduced turbidities and/or altered temperature and flow regimes; channelization of the Missouri river due to irrigation operations; and removal of wild individuals used for baitfish. Conservation strategies include: developing conservation practices on large rivers in Eastern Montana to include sustainable irrigation; educating public on the necessity of native species; and considering a management plan for the sicklefin chub or including it in another comprehensive taxonomic plan.

Pearl Dace (*Margariscus margarita*)

In Montana, pearl dace occur only in the Missouri and Saskatchewan River basins. Most known localities are in south-flowing tributaries to the Missouri River, downstream of the confluence of the Milk River. Pearl dace occur in lakes, cool bog ponds, creeks, and springs. Conservation concerns include: vulnerability of populations to predation and competition; collection by anglers seeking bait minnows; and anthropogenic stressors that increase water temperatures. Conservation strategies include: reducing stocking of non-native fish that compete or prey on this species; educating anglers of importance of native fish; and conserving prairie streams to include better range management practices.

Blue Sucker (*Cycleptus elongatus*)

In Montana, blue suckers are found in the Missouri and Yellowstone Rivers. They prefer swift current areas of large rivers. They feed on insects in cobble areas and then migrate upriver to congregate in fast, rocky areas to spawn. Conservation concerns include: habitat changes caused by large dams that block passage to spawning grounds, alter stream flow, and eliminate peak flows initiating spawning runs; channelization of large lotic systems; and changes in riparian habitat with less regeneration of woody trees and understory. Conservation strategies include: regulating water regimes to be more closely tied to natural water regimes; protecting natural minimum instream flow reservations; and continuing conservation of habitats by reducing grazing in riparian areas.

Trout-perch (*Percopsis omiscomaycus*)

In Montana, trout-perch occur in the South Saskatchewan River basin. Trout-perch are associated with rocky cover, and are not found over sandy or silty substrates. Conservation concerns include: sensitivity to pollution and sedimentation associated with row crop agriculture and channelization; sensitivity to warm water temperatures; and impoundments impeding movement of populations. Conservation strategies include: conserving riparian areas, including increased restrictions of fertilizers and nutrients seeped into waters; surveying in the Belly River and Waterton Lake to establish presence; and managing irrigation and development to improve connectivity of habitat.

Fish

Burbot (*Lota lota*)

Burbot are found in many river and stream drainages in cold, deep lakes and reservoirs. In lakes, they are mostly associated with bedrock and rubble substrates. River requirements are believed to be restricted to backwater areas of cooler, high-altitude systems. Conservation concerns include: overharvest; poorly understood life history traits and habitat requirements; and impoundments on river systems. Conservation strategies include: evaluating angler exploitation

rates and determining sustainability of wild populations; increasing surveys to gain basic population characteristics; and working with managing authorities to encourage reservoir management to mimic a natural hydrograph.

Sauger (*Stizostedion canadense*)

Sauger distribution is confined to the mainstem Missouri and small parts of the Marias, Musselshell, and Milk Rivers, and the lower Yellowstone River. Saugers typically occur in large turbid rivers and shallow turbid lakes. Conservation concerns include: water withdrawals resulting in low river flows; reservoir operation that alters the natural hydrograph; and barriers

that negatively influence spawning patterns. Conservation strategies include: minimizing the diversion of water from river channels by channelization and stream-bank armoring; regulating flow releases from dams; and installing fish screens and return structures to minimize entrapment of fish in irrigation canals (Nelson 1968; Walburg 1972).

Montana's Fish Species

All living things depend on water but no other vertebrate can tell us more about the quality of our water than fish. At least 90 fish species can be found in Montana's lakes, streams and rivers.

Amphibians

Coeur d'Alene Salamander (*Plethodon idahoensis*)

In Montana, the Coeur d'Alene salamander is known from about 45 locations in five northwestern counties. It is found in three major types of habitat: springs or seeps; spray zones of waterfalls; and edges of streams. Conservation concerns include: disturbances, such as timber harvest, fire, road and trail construction, and water diversion projects; pollution; and restricted mobility coupled with increasing habitat fragmentation. Conservation strategies include: fencing known salamander sites to exclude livestock; not applying chemicals (herbicides, pesticides, fertilizers etc.) within 300 feet of water bodies or wetlands; and protecting and conserving habitat by regulating development, logging, and chemical applications.

Western Toad (*Bufo boreas*)

The western toad is found throughout the mountains and intermountain valleys of western Montana on both sides of the Continental Divide. Habitats include low-elevation riparian and marshy areas to high-elevation ponds and fens. Conservation concerns include: breeding site destruction; diseases such as red-leg disease and chytrid fungus; and increased predation by species attracted to human disturbance. Conservation strategies include: surveying wetlands suitable for western toads and protecting certain wetlands from introduced species and human disturbance; preventing spread of chytrid fungus. [Personnel working at sites should thoroughly rinse and decontaminate all equipment as described in Maxell et al., 2004.]; and avoiding stocking of predatory game fish at sites lacking them.

Northern Leopard Frog (*Rana pipiens*)

The northern leopard frog is found across the prairie regions of eastern Montana. In recent years, it has been documented at only isolated sites west of the Continental Divide. Habitats used by northern leopard frog include low-elevation riparian and marshy areas. Conservation concerns include: loss of wetlands and hydrological regimes to drought; introduction of game fish, mosquitofish and bullfrogs; and pathogens, including chytrid fungus. Conservation strategies include: developing habitat conservation and improvement projects including protecting breeding sites from livestock impacts; allowing no introduction of game fish or bullfrogs into waters with known breeding; and preventing spread of chytrid fungus. [Personnel working at sites should thoroughly rinse and decontaminate all equipment as described in Maxell et al., 2004.]

REPTILES

Reptiles

Snapping Turtle (*Chelydra serpentina*)

In Montana, snapping turtle are present east of the Continental Divide, mostly in the Yellowstone River system and tributaries, especially the Tongue River drainage. Snapping turtles have been observed in backwaters along major rivers, at smaller reservoirs, and in smaller streams and creeks with permanent flowing water and sandy or muddy bottoms. Conservation concerns include: nest destruction and predation; human harvest of long-lived adults; and habitat loss and degradation, including

barriers that hamper movement of snapping turtles. Conservation strategies include: conserving nest areas; reviewing harvest limits; and conserving major rivers systems in Montana, including riparian habitats.

Spiny Softshell (*Apalone spinifera*)

In Montana, spiny softshell are present east of the Continental Divide in the Missouri River and Yellowstone River drainages, and some of the principle tributaries. Spiny softshells occupy larger rivers and tributaries, but can also occur in lakes, ponds, rivers, pools along intermittent streams, irrigation canals, and oxbows. Conservation concerns include: habitat loss and degradation, including barriers that hamper movement of spiny softshells; nest disturbance; and incidental take from anglers. Conservation strategies include: conserving major rivers in Montana; considering a management plan for the spiny softshell or including it in another comprehensive taxonomic plan; protecting nest sites from human disturbance; and thoroughly documenting observations and incidental take.

Western Hog-nosed Snake (*Heterodon nasicus*)

In Montana, the western hog-nosed snake is found east of the Continental Divide throughout the prairies. However, significant gaps in the known distribution remain. Little specific information for the state is available for habitat preference. Conservation concerns include: the poorly understood distribution and status; pet trade industry; and declines in prey (amphibians). Conservation strategies include: considering management plan for the western hog-nosed snake or including it in another comprehensive taxonomic plan; increasing education and information on reptile biology and awareness of the importance of den and nest sites; and targeting surveys (specific to both hog-nosed snakes and prey base) in suitable habitat to continue determining abundance and range in Montana.

Milksnake (*Lampropeltis triangulum*)

In Montana, the milk-snake is found east of the Continental Divide throughout much of the prairie regions, although more observations have been reported in southeast Montana. Little specific information is available on habitat preferences. Conservation concerns include: poorly understood distribution, status, and biology; and declining numbers due to the pet trade industry. Conservation strategies include: considering management plan for the milksnake or including it in another comprehensive taxonomic plan; targeting surveys (specific to the milksnake) in suitable habitat to continue determining its range in Montana; and increasing education and information on reptile biology and awareness of the importance of den and nest sites.

Smooth Greensnake (*Opheodrys vernalis*)

The smooth greensnake is restricted to extreme northeastern Montana north of the Missouri River, at elevations below 2150 feet (655 meters). Little habitat information is available for the species in Montana. Conservation concerns include: poorly understood distribution, status, and biology in Montana. Conservation strategies include: considering a management plan for the smooth greensnakes or including it in another comprehensive taxonomic plan; targeting surveys (specific to the smooth greensnake) in suitable habitat to continue determining its range in Montana; recording all observation of this species to continue establishing its range in Montana; and conserving habitats where smooth greensnake occur.

MONTANA'S 18 REPTILE SPECIES

Montana's 18 reptile species represent a valuable biological and cultural resource. Reptiles, such as the gartersnakes and turtles encountered near many wetlands, have provided many people with their earliest memories of appreciating wildlife.

BIRDS

Common Loon (*Gavia immer*)

In Montana, the loon breeding range is primarily restricted to low elevation glacial lakes in the northwest corner of the state. Successful nesting requires both nesting sites and nursery areas. Conservation concerns include: disturbances to loon nesting and foraging lakes by human activities such as boating or angling; loss of connectivity within Montana's populations as well as with other western populations; and loss of nesting habitat due to development, water level alterations and recreation. Conservation strategies include: implementing a territorial ranking system to identify priority nesting lakes; connecting population demographics and trend information for breeding sites and migratory routes; maintaining the suitability of currently used nesting territories; and creating site-specific management plans.

Trumpeter Swan (*Cygnus buccinator*)

The breeding range of trumpeter swans in Montana is restricted to southwest Montana and along the Rocky Mountain Front. The non-breeding range is limited to Beaverhead, Gallatin, and Madison counties. Habitat in Montana includes lakes, ponds and adjacent marshes containing sufficient vegetation and nesting locations. Conservation concerns include: isolation of breeding populations; wetland degradation and destruction; and lack of information on breeding success. Conservation strategies include: protecting known nesting habitat and managing nesting habitat in a manner compatible with increasing swan production and connectivity between populations; restoring wetland; and continuing surveying and monitoring of populations.

Harlequin Duck (*Histrionicus histrionicus*)

The Harlequin duck range is found mainly in northwestern Montana and the Greater Yellowstone Ecosystem. Harlequin ducks inhabit fast moving, low gradient, clear mountain streams. Conservation concerns include: range and forest management practices; human disturbance during breeding season; and water pollution on headwater streams utilized for nesting, brood rearing and prey base. Conservation strategies include: managing grazing to preserve riparian vegetation and streambank stability; decreasing human disturbance such as boating, hiking and camping during breeding season; and working with cooperators and public to identify and reduce point source pollution in headwater streams.

Bald Eagle (*Haliaeetus leucocephalus*)

The majority of eagles are found in western Montana, although breeding pairs may be found along major rivers and lakes including the Yellowstone and Missouri Rivers through prairie lands. The bald eagle is primarily a species of riparian and lacustrine habitats, especially during the breeding season. Conservation concerns include: maintaining forest stands for nesting, roosting and foraging; sensitivity to human disturbance particularly to fledglings; and contaminants (lead, residual pesticides). Conservation strategies include: monitoring and surveying for breeding pairs and locations of nests; minimizing disturbance during nesting season; and enforcing regulations addressing pollution in waterways.

Greater Sage-Grouse (*Centrocercus urophasianus*)

Distribution of greater sage-grouse includes the eastern one-half and southwest corner of Montana. Greater sage-grouse require the naturally occurring patchwork of sagebrush communities to meet survival and reproduction needs. Conservation concerns include: conversion of native sagebrush grassland to cropland, nonnative pasture or residential development; fragmentation of sagebrush grasslands (e.g., structural developments, roads, urban sprawl); and vulnerability to West Nile virus. Conservation strategies include: promoting conservation of intact sagebrush grasslands through incentives and easements; utilizing local cooperators to expand greater sage-grouse conservation; quantifying impacts of energy development; and continuing funding and research on associations between West Nile virus and greater sage-grouse populations.

Columbia Sharp-tailed Grouse (*Tympanuchus phasianellus columbianus*)

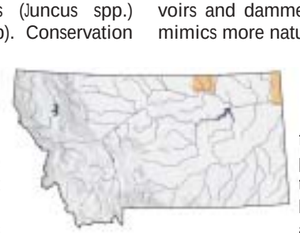
In Montana, there are two known populations, the Tobacco Valley near Eureka, and the Blackfoot Valley, near Helmville. Columbia sharp-tailed grouse are associated with prairie and sagebrush grasslands. Conservation concerns include: isolated and extremely small populations; human disturbance to leks; and conversion of native grassland communities to agriculture. Conservation strategies include: increasing abundance and distribution by re-introduction program into northwest Montana that include the development of a captive rearing program; protecting known lek areas and the surrounding habitats and search for new leks; and cooperating and communicating with land managers and land owners in managing habitat, to include British Columbia.

Birds

Yellow Rail (*Coturnicops noveboracensis*)

The Yellow Rail is thought to occur regularly in the northeastern corner of the state and is rare elsewhere. However there are fewer than 20 known observations in the state. Breeding habitat selection consists of wet sedge (Carex spp.) meadows and other wetlands containing grasses, rushes (Juncus spp.) and bulrushes (Scirpus spp). Conservation concerns include: little known information in Montana; human disturbance of wetland habitats; and water level manipulation at nesting locations. Conservation strategies include: increasing surveying and monitoring projects; conserving wetlands; and managing reservoirs and dammed rivers in a manner that mimics more natural seasonal fluctuations.

Whooping Crane (*Grus americana*)



For the past 20 years, whooping cranes have been observed in northeast Montana, with limited sightings at Red Rock Lakes National Wildlife Refuge (a reintroduction effort to establish a population at Grays Lake, Idaho, which no longer exists). The whooping crane has been observed in the marsh habitat at Medicine Lake and Red Rock Lakes National Wildlife Refuges. Conservation concerns include: habitat degradation and fragmentation to native prairies; human disturbance to nesting locations; and human misidentification as sandhill cranes during hunting season. Conservation strategies include: conserving habitat in northeast Montana (outside Medicine Lake NWR); prohibiting public access to breeding locations, including aircraft and a periodic census to evaluate productivity; and educating hunters.

Piping Plover (*Charadrius melodus*)

The piping plover is generally a species of northern and northeastern Montana. It is known to breed in wetland areas throughout this region. Piping plovers primarily select un-vegetated sand or pebble beaches on shorelines or islands in freshwater and saline wetlands for nesting. Conservation concerns include: destruction and degradation of summer and winter habitat; shoreline erosion; human disturbances of nesting and foraging birds; and predation. Conservation strategies include: protecting as much existing native prairie as feasible, primarily by conservation easements; restoring drained wetlands; increasing nesting substrate when it appears to be a limiting factor affecting use of wetlands; avoiding oil and gas development near wetlands; and directing predator management.

Mountain Plover (*Charadrius montanus*)

Primary breeding habitat of the mountain plover is found in north-central Montana in Phillips, Blaine, and northern Fergus and Petroleum counties. Habitat use in Montana appears similar to other areas within the breeding range. Use of prairie dog colonies and other short-grass prairie sites are confirmed as preferred breeding habitat. Conservation concerns include: invasive non-native plant species; habitat loss of short-grass prairies due to conversion to cropland; and decreases in prairie dog colonies. Conservation strategies include: controlling shrub and noxious weed encroachment at known and potential breeding sites; protecting existing native grassland from conversion to cropland; and continuing to manage and potentially enhance prairie dog colonies.

Long-billed Curlew (*Numenius americanus*)

The long-billed curlew breeds widely throughout Montana, although more commonly east of the Rocky Mountains. Long-billed curlews require short grass, bare-ground components, shade, and abundant invertebrate prey. Conservation concerns include: habitat loss (e.g. sod busting, weed invasion, general conversion of prairie lands); fragmented, unprotected, or mismanaged breeding habitat; and human disturbance to grassland habitats (including impacts of cattle grazing, roads, pesticide application and draining of wetlands). Conservation strategies include: preventing conversion of prairie lands to other land uses; providing large blocks of suitable habitat; and maintaining vertical structure through appropriate management techniques.

Interior Least Tern (*Sterna antillarum athalassos*)

Interior least terns breed along the lower portions of the Missouri River and on the lower Yellowstone River. Interior least terns nest on un-vegetated, sand-pebble beaches and islands of large reservoirs and rivers. Conservation concerns include: human use and bird or mammal predation on adults, juveniles, and eggs; pesticide and heavy metal pollution; and human modification of river flow (e.g., reduction of spring floods by dams), bank stabilization and channelization, resulting in reduced availability of bare island/sandbar nesting habitat. Conservation strategies include: controlling predators; decreasing point and non-point inputs of pesticides and heavy metals into rivers and floodplains; and decreasing human modifications of flows on larger rivers and Fort Peck Reservoir.

Birds

Black Tern (*Chlidonias niger*)

Black terns have been documented breeding in the northern half of Montana. Black tern breeding habitat is mostly wetlands, marshes, prairie potholes, and small ponds. However, several locations are on man-made islands or islands in man-made reservoirs. Conservation concerns include: loss or degradation of wetlands for breeding and migration; pesticide reduction of favored insect foods; and lack of information. Conservation strategies include: incorporating black tern habitats (known and potential) into any wetland restoration programs; reducing nutrient loading from runoff at known black tern nesting sites; and implementing a public education and sighting program, similar to the program for common loon nesting sites; and continuing monitoring at known breeding locations.

Flammulated Owl (*Otus flameolus*)

The range of flammulated owls in Montana is restricted to the western portion of the state, which includes areas east of the continental divide. In Montana, flammulated owls are associated with mature and old growth xeric ponderosa pine/ Douglas-fir stands and in landscapes with higher proportions of suitable forest of low to moderate canopy closure. Conservation concerns include: loss of old-growth forests; inadequate monitoring efforts; and fire suppression. Conservation strategies include: conserving old-growth forests; continuing monitoring efforts to include night monitoring; and considering use of prescribed fire near mature forest stands to reduce understory stocking and enhance the shrub component.

Burrowing Owl (*Speotyto cunicularia*)

Burrowing owls are widely distributed east of the Continental Divide with no records west of the Continental Divide since 1991. Burrowing owls are found in open grasslands, where abandoned burrows dug by mammals such as ground squirrels, prairie dogs and badgers are available. Conservation concerns include: elimination of burrowing mammals that provide critical habitat; habitat loss and fragmentation due to agricultural and urban development; and petroleum exploration and development. Conservation strategies include: continuing maintaining and monitoring of burrowing mammals colonies; developing conservation easements and other conservation practices that recover or protect native prairie grassland areas; and researching impacts of road building and water retention pond construction as they relate to gas and oil development activities.

Black-backed Woodpecker (*Picoides arcticus*)

The state range of the black-backed woodpecker is primarily confined to northwest Montana. Potential breeding records also exist. That would expand their range to most counties in western Montana. The habitat for black-backed woodpeckers is early successional, burned forest of mixed conifer, lodgepole pine, Douglas fir, and spruce-fir. Conservation concerns include: increased timber harvest; fire suppression; and removal of fire-killed or insect-infested trees. Conservation strategies include: working with forest management agencies and companies to promote conservation practices; decreasing fire suppression to allow natural occurrences in isolated areas; and managing "salvage" logging techniques which remove dying and recently killed trees.

Olive-sided Flycatcher (*Contopus cooperi*)

The olive-sided flycatcher breeds throughout mountainous areas of western Montana with unconfirmed reports of breeding in central Montana. They are often associated with post-fire habitat, but may also be found in other forest openings (clear cuts and other disturbed forested habitat), and forest edges. Conservation concerns include: fire suppression management; decreased post-fire snags and large trees; and conversion of forest to urban and residential areas. Conservation strategies include: using prescribed fire, timber harvest, and thinning to change forest composition and structure to restore old open forest conditions; retaining, maintaining and/ or restoring stands of open-canopy mature and older ponderosa pine and cottonwood; practicing selective logging; and retaining forested edge habitat around riparian and wetland features.

Sedge Wren (*Cistothorus platensis*)

The migratory pattern of this species in Montana is poorly known, and few records exist for northeastern Montana. No specific information exists, but appropriate wetland habitat is present in the areas of Montana in which the species has been recorded. Conservation concerns include: lack of information, and human-directed disturbance to wetland habitats (i.e. impacts of cattle grazing, draining, vegetation manipulation, invasion of non-native plant and animal species.). Conservation strategies include: determining breeding status and identifying breeding locations; increasing surveying and monitoring projects; and managing conservation of wetland habitats known to be used by sedge wrens.

Mammals

Nelson's Sharp-tailed Sparrow (*Ammodramus nelsoni*)

Nelson's Sharp-tailed Sparrow has an extremely limited range in Montana. The species has only been observed in eastern Sheridan and northeastern Roosevelt counties. In Montana, this species prefers freshwater wetlands with dense, emergent vegetation or damp areas with dense grasses. Conservation concerns include: lack of monitoring or understanding; high risk of extirpation from the state due to small distribution; wetland destruction; and parasitism by brown-headed cowbird.

Conservation strategies include: increasing monitoring and surveying efforts, especially at breeding sites; protecting areas where species is found; restoring and protecting wetlands; increasing management of grazing regimes that promote healthy habitat; and supporting research to better understand natural relationship between host and parasite.

Montana's more than 400 bird species

Montana boasts more bird species than fish, mammal, and reptile species combined. Each of the more than 400 bird species recorded in the state is adapted to a particular habitat - ranging from alpine mountaintops to riparian river corridors, conifer forests to prairie grasslands. Some birds are only here temporarily during migration or the summer breeding season. Still, there are quite a few that are hardy enough to stay through the winter months. The diversity of bird species in Montana attests to the diversity of our landscape. Keep an eye out for our state's rich bird life, including a number of rare species. Unlike many other wild animals, birds regularly advertise their presence with song, color and movement.

Spotted Bat (*Euderma maculatum*)

Spotted bats appear to be restricted to areas east of the Continental Divide in south-central Montana. However, the full extent of the range in Montana is unknown. Spotted bats have been detected most often in open arid habitats dominated by Utah juniper and sagebrush. Cliffs, rocky outcrops, and water are other attributes of sites where spotted bats occur. Conservation concerns include: hazardous, standing water bodies associated with oil and gas fields; riparian degradation that could affect sustainable prey (moths) populations; and lack of information due to difficulty of surveying. Conservation strategies include: protecting water sources in arid regions; conserving riparian areas in arid regions; completing the Montana Bat Management Plan; and increasing monitoring and surveying.

Townsend's Big-eared Bat (*Corynorhinus townsendii*)

The Townsend's big-eared bat has been found in almost every part of Montana. Caves and abandoned mines are used for maternity roosts and hibernacula. Habitats in the vicinity of roosts include fir and pine, sagebrush scrub, and cottonwood bottomland. Conservation concerns include: vandalism to maternity colonies and hibernacula; abandoned mine closures; and degradation or loss of native riparian vegetation. Conservation strategies include: identifying maternity colonies and hibernacula; closing of caves and mines to recreationalists; installing bat-friendly gates to coal mines instead of closure; and maintaining or improving the condition of riparian vegetation in bat foraging areas.

Pallid Bat (*Antrozous pallidus*)

The distribution in Montana is not yet well defined, but several pallid bats have been captured east of the Continental Divide in south-central Montana. Habitat includes Utah juniper-black sagebrush, ponderosa pine, savannah and big sagebrush. Conservation concerns include: closure of mines for reclamation; lack of information on distribution, population, and requirements; oil and gas fields disturbing water sources; and roost disturbance. Conservation strategies include: installing new entrance barriers that allow free passage of bats; completing the Montana Bat Management Plan; increasing surveying and monitoring techniques; protecting water sources in arid regions; and protecting of roost sites.

Mammals

Pygmy Rabbit (*Brachylagus idahoensis*)

The range of pygmy rabbit in Montana is confined to the Southwest arid basin. Occupied habitats in Montana include shrub-grasslands on alluvial fans, floodplains, plateaus, high mountain valleys, and mountain slopes where suitable sagebrush cover and soils for burrowing are available. Conservation concerns include: loss of sagebrush habitat due to range management practices; fragmentation of available habitat; and the fact that the pygmy rabbit is a habitat specialist on all scales. Conservation strategies include: considering a management plan for the pygmy rabbit or including in another comprehensive taxonomic plan; resting and rotating livestock; coordinating efforts with federal agencies including BLM and USFS; and protecting sagebrush on a large scale.

Hoary Marmot (*Marmota caligata*)

Hoary marmots are found through coniferous forests in northwest Montana, including small, scattered, isolated populations south of the Mission Mountains. Habitat needs include rocky outcroppings and large boulder fields in high subalpine and alpine regions. Conservation concerns include: lack of data on Montana populations; little or no connectivity between populations in distinct mountain ranges; and change in climate patterns, potentially from global warming. Conservation strategies include: examining the feasibility of transplanting individuals between populations to increase genetic diversity; conserving small populations found on the periphery of their distribution; and conducting inventory and monitoring programs to establish long-term trends of abundance and distribution of populations.

Black-tailed Prairie Dog (*Cynomys ludovicianus*)

Black-tailed prairie dogs are found across most of eastern Montana. Prairie dog colonies are found on flat, open grasslands and shrub/grasslands with relatively sparse vegetation. Conservation concerns include: conversion of native rangelands to agriculture and residential development; conflicts between the present abundance of prairie dogs and other land uses; disease, particularly sylvatic plague; and poisoning as a governmental control program. Conservation strategies include: instituting a landowner incentive program and a prairie dog control program designed to manage prairie dog acreage; identifying isolated colonies and applying management measures to maintain current distribution; assisting in funding research projects targeting disease; and developing and implementing a prairie dog ecosystem education program.

White-tailed prairie dogs inhabit a small area in the south-central portion of Montana, near the Pryor Mountains. White-tailed prairie dogs inhabit xeric sites with mixed stands of shrubs and grasses. Conservation concerns include: conversion of native rangelands to agriculture and residential development; disease, particularly sylvatic plague; and vulnerability of remaining small and isolated colonies to extirpation. Conservation strategies include: instituting a landowner incentive program and a prairie dog control program designed to manage prairie dog acreage; assisting in funding research projects targeting effects of disease; and translocating white-tailed prairie dogs from colonies in the path of a highway project to a formerly occupied site on BLM land.

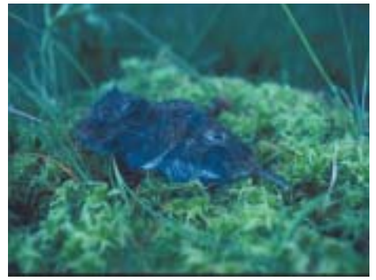
White-tailed Prairie Dog (*Cynomys leucurus*)

The Great basin pocket mouse is restricted in Montana to the extreme southwestern portion of the state. Occupied habitats are arid and sometimes sparsely vegetated. Conservation concerns include: competition for grasses (livestock probably compete with pocket mice for grasses and reduce shrub and grass cover); habitat loss by large-scale removal of sagebrush; and lack of biological information. Conservation strategies include: managing land to maintain a mosaic of sagebrush cover, size, and age classes, especially if it promotes the growth of grasses and forbs within sagebrush stands; rotating livestock areas; and considering a management plan for the great basin pocket mouse or including it in another comprehensive taxonomic plan.

Great Basin Pocket Mouse (*Perognathus parvus*)

In Montana, the northern bog lemming has been documented at 18 isolated sites, mainly west of the Continental Divide. Northern bog lemmings often occur in wet meadows, fens, or bog-like environments. Conservation concerns include: timber harvest around bog/fen habitats; range management practices, including exotic plant invasion to fens; and poorly understood distribution. Conservation strategies include: working with cooperators to limit timber harvest to beyond a 100 meter buffer surrounding sphagnum, other fen moss mats, or associated riparian areas which could provide corridors for dispersal; minimizing livestock grazing in drainages with unsurveyed moss mats; and considering a management plan for the northern bog lemming or including it in another comprehensive taxonomic plan.

Northern Bog Lemming (*Synaptomys borealis*)



Mammals

Meadow Jumping Mouse (*Zapus hudsonius*)

Meadow jumping mice are found in southeastern counties from the Missouri River/Yellowstone River confluence to the Powder and Tongue Rivers. Meadow jumping mice have been found in dense and lush grass in marshy areas, riparian areas and woody draws. Conservation concerns include: destruction of natural springs/seeps for livestock, and wetland conversion; lack of knowledge regarding immediate and long-term impacts of grazing; and lack of biological information. Conservation strategies include: increasing management and protection of springs and seeps within range; considering a management plan for the meadow jumping mouse or including it in another comprehensive taxonomic plan; and standardizing surveys to obtain biological information of populations.

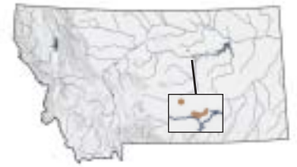
Gray Wolf (*Canis lupus*)

Since the 1995 reintroduction efforts, gray wolves have re-colonated many areas of western Montana and are expanding their range into new regions including the Bitterroot, Gravellys and Absaroka-Beartooths. The gray wolf exhibits no particular habitat preference. Conservation concerns include: variable public tolerance; human-caused mortality (illegal shooting, conflicts with livestock, misidentification, vehicle or train strikes); and disease. Conservation strategies include: assisting private landowners to decrease potential for negative livestock-wolf interactions; using public outreach to increase awareness of wolf biology, conservation, and management; adapting management dynamically with the status of wolf population and distribution; and monitoring populations through blood sampling to identify potential diseases.

Grizzly Bear (*Ursus arctos horribilis*)

Grizzlies occur in northwest Montana, coming down east off the Rocky Mountain Front, and in Yellowstone National Park with individuals moving into the Gallatin and Custer National Forests. Grizzlies primarily use mixed grass/shrub meadows, riparian zones, closed and open timber, and alpine habitats. Conservation concerns include: human-bear and bear-livestock interactions; habitat loss, degradation and fragmentation; and genetic fragmentation among populations. Conservation strategies include: developing proactive management utilizing Montana citizens; continuing interagency management efforts; protecting critical habitats through easements and other methods; and continuing research projects, including genetic analysis.

Black-footed Ferret (*Mustela nigripes*)



Only reintroduced populations of black-footed ferrets are currently present. They once ranged throughout much of eastern Montana. Black-footed ferrets are intimately tied to prairie dogs and are limited to the habitat that they use (grasslands, steppe, and shrub steppe). Conservation concerns include: reduction of habitat; declining prey base (prairie dogs); disease, such as canine distemper; and failure of reintroduction efforts. Conservation strategies include: supporting strategic conservation easements by organizations and public agencies; working through cooperative agreements to manage for healthy populations of prairie dogs; continuing monitoring diseases that impact the health of populations; and continuing to support future reintroduction efforts that include the adaptive management paradigm.

Canada Lynx (*Felis lynx*)

Canada lynx are mainly found in the mountains of western Montana. Canada lynx west of the Continental Divide generally occur in subalpine forests in stands composed of either lodgepole pine or stands of coniferous and deciduous hardwoods. Conservation concerns include: conifer habitat loss and destruction; competition with other predators that can survive in today's more fragmented landscape; and road construction decreasing connectivity and movement, and increasing potential for human disturbance. Conservation strategies include: developing adequate management strategies between agencies to protect dense tree stands; maintaining natural mosaic of forest by allowing low to medium level fires; and conserving contiguous tracks of habitat by working with agencies to manage for road construction and development.

American Bison (*Bos bison*)

Free-ranging American bison in Montana are located only in areas surrounding Yellowstone National Park. Another semi-wild population occurs at the National Bison Range in northwestern Montana. Throughout their range, American bison inhabit open plains and grasslands. Conservation concerns include: control issues for bison moving in and out of Yellowstone National Park; disease (Brucellosis); and bison being ecologically extinct with a very reduced range of free-roaming herds. Conservation strategies include: continuing development of working relationships with landowners; controlling brucellosis; and establishing free-ranging, disease-free populations in habitats outside Yellowstone National Park where they can function ecologically to restore grassland systems.

Component IV

Inventory

Species in Greatest Need of Inventory